



March 12, 2015

To: Honorable Mayor Mark Wheatley and Arcata City Council Members
From: Margaret Gainer and Julie Layshock, Zero Waste Humboldt
Subject: The City's Consideration of a Ban
of Polystyrene Food and Beverage Containers

Zero Waste Humboldt urges the City of Arcata to ban polystyrene food and beverage containers. The ZWH position is straightforward and two-fold:

1. Polystyrene should be banned from touching food and beverages for reasons of consumer safety.
2. Polystyrene must be removed from our municipal waste stream because of its environmental persistence, with no real end-of-life options for polystyrene products.

The Basic Chemical Description of Polystyrene:

Two petroleum derived chemicals, styrene and benzene, make up the polymer called, Polystyrene (PS), a hard plastic also called polyvinyl styrene. When the polymer is expanded and air is allowed to spread apart the polymer chains, >90% of the product is air. This is what we call Styrofoam. Polystyrene may also be called Expanded Polystyrene (EPS) or Extruded Polystyrene (XPS). The difference is the manufacturing process but the chemical components are the same.

All of these carry the resin code #6. Although PS can be recycled into picture frames, cafeteria trays, or packing filler (not back to food packaging), it is a rarity for two main reasons:

- PS cannot be recycled anywhere in California (cawrecycles.org) and there is very little of a market elsewhere.
- Food-contaminated PS cannot be "de-greased" and remains contaminated excluding the possibility of recycling.

Human Health Concerns:

The tendency of the monomers and other chemicals to leach into food and beverages, increases with heat, acidic foods, fatty foods, and alcohols. **This means that PS is not a good choice for food containers in the first place.**

The manufacturing of the polymer releases styrene, benzene, and other volatiles known to cause acute toxicity. Benzene is a known human carcinogen.

In 2011, the National Institute of Health's National Toxicology Program labeled the styrene monomer as "reasonably anticipated to be a human carcinogen." The U.S. Food & Drug Administration is currently re-evaluating the safety of PS for food packages.

Environmental Health Concerns:

PS manufacturing is unsustainable due to the feedstock of oil; and, it is a dirty process. The manufacture is assisted by the use of blowing agents– HCFCs (CFC replacements) of which are marginally better than CFCs as ozone depleting agents.

PS ends up in the landfill or in our environment. It is NOT biodegradable but it is light-weight and buoyant. Being a brittle polymer, it easily breaks down into smaller pieces, further dispersing throughout the environment. Numerous studies have documented the ingestion of plastics and adverse effects (like starvation) in marine fauna.

The California Integrated Waste Management Board assessed the manufacture, use, and disposal of many manufactured goods and found PS to be the second worst (Aluminum #1) for the environment – based on energy consumption, Greenhouse Gas Emissions, and other environmental factors.

We encourage the City of Arcata to join the 90+ other California cities to ban Polystyrene. To link to other California local government ordinances, see: http://www.cawrecycles.org/issues/plastic_campaign/polystyrene/local

If the City needs additional information regarding Polystyrene, Zero Waste Humboldt offers our research and technical assistance to help in the successful implementation of this ban.